

CS2026 ASSIGNMENT 11 (Due Date: May 29, 2026)

Instructions: You have to answer all of them. Put your answers in a MS WORD file, or other word processing file, and then submit the file to the course Gmail account. Some answers can be found in the lecture notes.

Question 1

First of all, it should be noted that the a main memory is partitioned into sectors. In the lecture, John Sum introduced a problem of *bad sector*. It can appear in hard drive and solid-state drive.

- (a) What is a typical size of a sector in hard drive?
- (b) What is a typical size of a sector in solid-state drive?
- (c) State a cause of bad sector in a hard drive?
- (d) State a cause of bad sector in a solid-state drive?

Question 2

In the lecture, John Sum mentioned that all instructions, either from the operating system or the application systems, must be executed by the CPU.

- (a) For a computer with one CPU, can the CPU simultaneously execute two instructions at a time?
- (b) We say that the computational power of a CPU must be shared for both the operating system and the application systems. What is this mode of sharing?
- (c) While the CPU is executing an instruction, does it know which process the instruction is from? Recall that each program being executed must be assigned by the operating system with a unique *process ID*.

Question 3

In the lecture, John Sum introduced two types of programming languages, namely compiled language and interpreted language.

- (a) State the names of any three compiled programming languages.
- (b) State the names of any two interpreted programming languages.
- (c) State any three software in which an interpreter has been embedded.
- (d) State the differences between compilation and interpretation.